

**NOMINATION**

**OF**

**LAUNCESTON WATER SUPPLY 1857**

**AS A**

**HISTORIC ENGINEERING MARKER**



Prepared by Ken Hose  
(formerly Deputy City Engineer and currently in-house consultant of Launceston City Council)

For the Launceston City Council and Esk Water

August 2007

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**Cover Photo - The weir on St Patricks River, below Nunamara, with the diversion weir, sluice gates and the commencement of the flume.**

**\* A location map is included in Attachment D.**

**PLAQUE NOMINATION FORM**

The Administrator  
Engineering Heritage Australia  
Engineers Australia  
Engineering House  
11 National Circuit  
BARTON ACT 2600

Name of work: **LAUNCESTON WATER SUPPLY, 1857**

The above-mentioned work is nominated to be awarded a  
**Historic Engineering Marker**

Location, including address and map grid reference if a fixed work:

Headworks: Between Nunamara and Waverley (see Drawing entitled Water Trunk Main & Reservoirs in the late 1850's). The St Patricks River dam is located at 147deg 22' 24'E / 41deg 21' S

Fountain: Princes Square, Launceston.

**Owners**

Headworks: Esk Water, 323 George Town Road, Rocherlea, Tas 7248  
Fountain: Launceston City Council, St John Street, Launceston Tas 7250

The owners have been advised of this nomination and letters of agreement are attached.

**Access to site:**

Headworks: By arrangement with Esk Water  
Fountain: Located in public park: free access every day of the year.

Nominating Bodies: Launceston City Council & Esk Water

Chairs of Nominating Bodies

Launceston City Council – Mayor Alderman Ivan Dean

  
.....

Date: 26-07-07

Esk Water – Liz Swain

  
.....

Date 27-7-07

Bruce Cole  
Chair of Engineering Heritage Tasmania

.....

Date: .....

## HISTORICAL NOTES

Launceston was settled, from 1806, at the confluence of the North and South Esk rivers. One of the reasons for settlement was the available supply of clean water. While ample water flowed in the South Esk, it was difficult to harvest from the rocky and flood-prone Cataract Gorge. Water was collected mainly from the tidal North Esk River, but it was brackish and muddy. There were many attempts to develop a supply, including 8 schemes between 1850 and 1857.

In January 1853, the water supply issue became a responsibility of an elected council. John Lamont, who lived in Launceston, but knew the river systems well, suggested to the then Mayor, Alderman W S Button, that it might be possible to take St Patricks River water across a saddle and into Distillery Creek. Lamont had remembered an idea of the owner of the distillery, James Towers, who had thought of improving his water supply by diverting water from St Patricks River. George Babington was the Town Surveyor, and in 1856 he was instructed by the council to prepare an estimate of transferring water from the river to the creek. The council adopted the idea and advised the Government of its choice. W H Clayton was appointed to make a survey on behalf of the Government. By 2<sup>nd</sup> December 1855, the Council's Water Committee was able to report on W H Clayton's plan to supply water from St Patrick's River.

This was a scheme to divert St Patrick's River below Nunamara, construct races on both sides of an intervening hill and connect the races by means of a tunnel. The diverted water would then enhance the flow of Distillery Creek and the water would be captured at the head of the gorge above Waverley. A small storage would be created and pipes would take the water over the North Esk River and discharge into a reservoir at about St George's Square on High Street.

Mr W R Falconer, the Director of Public Works, Hobart, was appointed to superintend the construction of the scheme. He also provided engineering services. In July 1856, he wrote to the Mayor that "there would be no difficulty in introducing water to Launceston from St Patricks River and Distillery Creek. The creek storage was to be 341 feet above high water and water would be piped to the town using iron pipes." Estimates were about £28,000. The estimates included £500 for a fountain at St Johns Square, now called Prince's Square.

The water was diverted from the St Patricks River by means of a bluestone rock dam, which was simply constructed by placing rough stones together without any cement or binding material. It is estimated that the minimum flow in St Patricks River at Nunamara is about 30 ML/day, so the loss through the dam was not significant at the time.

The diverted water flowed through a flume about 975 metres in length. It is believed that the flume was a composite timber and cement mortar lined structure and was basically constructed by day labour. A tunnel some 154 metres in length, with additional cut and cover sections taking the overall enclosed length to 210 metres, was required. A further timber-lined and open earth channel completed the transfer of the water to the headwaters of Distillery Creek.

The construction of the tunnel was contracted to a Mr Henry Newman on 7<sup>th</sup> May, 1856. Mr William Huttley was appointed by the council to act as Resident Superintendent of Launceston Waterworks to assist Mr Falconer.

Work on the tunnel was well underway in August, 1856, but unfortunately, the crown of the tunnel fell in due to water seepage and blasting the rock without having sufficient supporting timbers. Falconer directed Newman to change his methods. In addition to wall and roof support, timber sleepers were set into the tunnel floor to provide an even base. In spite of the difficulties, the tunnel was finished in 1857 and is still in use today, albeit with a concrete lining provided in 1912.

The smaller dam on Distillery Creek, above Waverley, was a concrete structure diverting water from the creek into the 10 inch (250 mm) cast iron pipe. The pipeline crossed the North Esk River at Hoblers Bridge and continued to the site of a tank off High Street. A 225 mm pipe was laid in Frankland and George Streets to link to another tank being constructed at Hill Street, West Launceston, then called Cataract Hill. The brick reservoirs were constructed by contractor Philip Miller in 1857/58. Iron pipes were supplied by various British foundries. A major supplier was Phoenix Iron

Works of Glasgow. Pipes were bored and turned and driven together with a little red lead, as noted by Edward Snell in January 1858.

Except for the reservoirs, the works were completed in 1857, with the opening ceremony and opening of the sluice gates performed by the Mayor, Ald. Henry Dowling, on 23<sup>rd</sup> October, 1857.

The fountain in Prince's Square was purchased from a Parisian firm exhibiting at the London Exhibition. The fountain was provided by the Council to celebrate the arrival of the new water scheme. It arrived in Launceston in February 1858 and was immediately erected by Mr Huttley. It was not however, until 1859 that the fountain was in full operation.

The water supply, as well as being distributed to all who wanted to pay, was also able to be used to flush street table drains and supply many drinking water fountains other than the main fountain in Prince's Square. The water supply also enabled the installation of a water-borne sewage system. In 1860, a start was made on providing underground sewers, and two volunteer fire brigades were established. The population would have been less than 10,000, but the town soon doubled in size and became a city in 1888.

The summer of 1887-88 was very dry, and the council took advantage of the low flows to rebuild the weir as a concrete wall some 100 feet (30 m) long, 4 to 6 feet high, 6 feet wide at the base and 3 feet at the top. The work was started on 24<sup>th</sup> February, 1888, and completed prior to winter rains setting in.

### **Later Improvements and Expansions**

The capacity of the trunk main to the city was expanded by construction of a 15 inch (375 mm) pipeline in 1882 and larger reservoirs were constructed in the city. It was not long before two more 375 mm pipes were added. Around the turn of the century, there was some thought of treating the water, as Distillery Creek passed through swamps and land being developed for farming and the water was sometimes highly coloured and turbid. In 1923, Paton & Baldwins set up a textile mill on the promise of the council committing to water treatment. The treatment plant was completed in 1925 and treated water at a rate of 9 ML/day. Additions quickly followed, increasing the capacity to 40 ML/day so that all ratepayers benefited.

The areas supplied by the scheme in 1857 were all on the south side of the North Esk River. The current supply area is shown on the attached plan.

From 1950, separate water supplies were added to supply water to the Tamar Valley. Water was taken from the North Esk River to serve the eastern side of the Tamar River and from the South Esk River at Trevallyn Dam to service the west side. All of the headworks and major pipelines owned by The Rivers & Water Supply Commission, Launceston City Council, GeorgeTown Council, West Tamar Council and Meander Valley Council were handed to the Esk Water Authority in 1997.

## HERITAGE ASSESSMENT

### 1. BASIC DATA

Item Name:	Launceston Water Supply		
Other/former Names:	Launceston Water Works		
Location:	147deg22'24"East/41deg21'South for the dam.		
Address:	Nunamara, Tasmania		
Suburb/Nearest Town:	Nunamara, Waverley, Launceston		
State:	Tasmania		
Local Government Area:	Launceston		
Owner:	Esk Water		
Current Use:	Water supply		
Designers:	John Lamont, W.H.Clayton, W.R Falconer		
Maker/Builder:	Launceston Municipal Council Engineer – W R Falconer Contractor for tunnel – Henry Newman Contractor for town storages – Philip Miller		
Year Started:	1856.	Year Completed:	1857/58

#### Physical Description:

The headworks of the Launceston water supply consists of a concrete weir on St Patricks River, sluice gates, a concrete race, a tunnel, and a further open channel. The water diverted from St Patricks River joins that in the upper reaches of Distillery Creek. In 1857, the water in Distillery Creek was collected at a small dam near Launceston, and cast iron pipes carried the water over the North Esk River, and into the then town. Brick storage tanks, 45 feet (13.7m) internal diameter and 15 feet (4.6 m) in depth were constructed at sites near High Street and Frankland Street and near to Hill and York Streets in West Launceston.

#### Physical Condition:

The weir is in fair condition, the sluices are in good condition, the original race has been replaced and the tunnel is in good condition. The flume below the tunnel is in poor condition.

#### Modifications and Dates:

The weir was made more watertight in 1888 the tunnel was concrete lined in 1912. The iron sluices were replaced using steel in 1967. The race was replaced with a larger concrete structure, following much the same alignment, in about 1967. The original dam on Distillery Creek is still there, but not used. The two brick storages have been decommissioned for at least 15 years, with the High Street tank demolished and the Hill Street tank filled in.

#### Listings:

Prince's Square is listed in the Australian Heritage Places Inventory ID 4499. The commemorative fountain, its purpose and ten public drinking fountains are mentioned in the description. The link to Tasmanian Heritage Register "for more info" provides none.

## 2. ASSESSMENT OF SIGNIFICANCE

### Historic Phase:

The water scheme was built at a time when the lack of good water was restraining development. Many schemes had been put forward, but none had been completed. A limited supply was available from the South Esk River via a timber flume down Cataract Gorge built to supply Ritchie's flour mill, but the water was only available in barrels. The creation of a Municipal Council in 1853 made it possible for locals to make their own decisions and the Council made reticulated water one of its first priorities.

### Historic Individuals or Associations:

The Launceston Municipal Council proved itself to be a progressive body overcoming legislative, financial and engineering hurdles to bring the scheme to fruition. It carried out some of the construction work with its own resources, but mostly the work was carried out by contractors.

The role of individuals is described in the history section. The principal players were:

- Mayor W S Button, who championed the information given to him by Jock the Piper (John Lamont);
- George Babington, Town Surveyor, who took some levels and advised the council that the scheme was feasible and desirable;
- WH Clayton, the Government Surveyor, who carried out the survey of the whole system.
- W R Falconer, Director of Public Works, who was appointed to superintend the work, but found himself also being the designer, estimator, specification writer, etc
- Mayor Henry Dowling, who took a great interest in the scheme before, during and after the waterworks scheme.
- William Huttley, the Superintendent of Launceston Water Works.

### Creative or Technical Achievement:

The adopted scheme had many advantages over other options. The ample flow in the St Patricks River avoided the cost of a major storage to maintain supply during dry periods. The high elevation of the source enabled gravity to deliver the water without the on-going cost of pumping. The transfer of water to Distillery Creek from a much larger catchment by means of a race, a short tunnel and Distillery Creek's natural water course, was a very economical solution.

The scheme is still supplying much the same area of Launceston now as it did 150 years ago.

### Research Potential:

Hydraulic flows in open channels.

### Social:

The main social benefit is the provision of clean water to all the houses and businesses in the town at an affordable price. It enabled a sewerage system to be built. It improved convenience, health and hygiene enormously. Water was plentiful and used for flushing animal droppings and other material into the drains and sewers. Two volunteer fire brigades were formed once the reticulated supply became available.

The then very recently formed council was working for its ratepayers – wanting to make life better – proving that it was a better vehicle for meeting community needs than colonial government.

### Rarity:

Evidence of using natural forces accompanied by local skills. It is unusual for a water supply scheme still to be operating close to its original form after 150 years and to be supplying much the same quantity of raw water as it originally did, given that the area expanded from a small town of about 8,000 people to 22 square kilometres of developed city having at its peak some 50,000 citizens.

### Representativeness:

A good example of an early gravity water supply scheme supplying a growing city.

**Integrity/Intactness:**

In 1857, the headworks of the Launceston water supply consisted of a stone weir on St Patricks River, sluice gates, a concrete lined race, a tunnel and a further open channel. The water diverted from St Patricks River joined that in the upper reaches of Distillery Creek. The water in Distillery Creek was collected at a small concrete dam near Launceston. All of these features remain. The original reservoirs have since been demolished or filled in, while other parts have been modified.

**3. STATEMENT OF SIGNIFICANCE**

The search for a clean water supply source for the rapidly expanding Launceston settlement in the early 1800s gave rise to multiple suggestions, some of which were started but none were completed. The formation of councils for Launceston and Hobart in 1853 gave the residents the power to act. The choice of a gravity supply from a source some 14 kilometres from the town was a substantial commitment for the people. The engineering work was not unique, but it was a practical use of the available skills. The significance of the scheme was that it enabled the citizens of Launceston to enjoy high quality water at a reasonable price due to the benefits of gravity, to enable population growth and to install a sewerage system commencing 1860. While work has been done to enhance the tunnel and replace the race (to increase the flow), the headworks are basically the same today as they were in 1857.

The system operated in the same way until the construction of a water treatment plant in 1925, where the raw water was taken from Distillery Creek some 2 kilometres further upstream and delivered to the treatment plant via an open flume.

**Assessed Significance:** Local

**DRAFT CITATION FOR PLAQUE****HISTORIC ENGINEERING MARKER**

Launceston Water Supply, 1857

In 1857 the fledgling municipal council gave Launceston its first reticulated supply by diverting water from the St Patricks River. Still in operation, this gravity scheme consisted of a diversion weir, water race and tunnel delivering water into Distillery Creek whence it was piped to the High Street and Hill Street reservoirs. Reticulation served the town centre, surrounding suburbs and the Prince's Square fountain which was erected to celebrate the opening. Public drinking fountains, volunteer fire brigades and a sewerage system quickly followed.

The Institution of Engineers Australia  
Launceston City Council and Esk Water 2007



## ATTACHMENT A      REFERENCES

*The Cyclopaedia of Tasmania, Vol II*, 1900

Balsille, George Davy, *Water Treatment Plant, Launceston*. Paper, February 1926.

Button, Henry. *Flotsam and Jetsam: Floating Fragments of Life in England and Tasmania, Launceston* (1909)

The Life and Adventures of Edward Snell, *The Illustrated Diary of an Artist, Engineer and Adventurer in the Australian Colonies 1849 to 1859*. Published by Angus and Robertson, 1988.

Miranda Morris-Nunn and CB Tassell *Launceston's Industrial Heritage: a Survey*. Queen Victoria Museum, 1982

Tassell, Margaret, *Rural Launceston Heritage Study*. (Unpublished report of the QVMAG etc, Launceston May 2000).

Tassell, Margaret, Heritage report form.

Multiple extracts from Launceston City Council records held by the Community History Centre at the Queen Victoria Museum and Art Gallery, Inveresk.

## ATTACHMENT B

## OWNERS'S PERMISSION



B Cash  
(03) 63362571  
2010/01  
b.cash@eskwater.com.au

26 July 2007

Mr B Cole  
Chair of Engineering Heritage Tasmania  
2 Davey Street  
HOBART TAS 7000

Dear Bruce,

**LAUNCESTON WATER SUPPLY, 1857 – HISTORIC ENGINEERING  
MARKER**

Esk Water as the current owner of the headworks which were inherited from Launceston City Council on our formation in 1997 is very happy to agree to the erection of the plaque in commemoration of this significant achievement of the early engineering profession in Tasmania.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Barry Cash".

Barry Cash  
**CHIEF EXECUTIVE OFFICER**

323 George Town Road, Rocherlea 7248, Tasmania. PO Box 745 Launceston, Tasmania. 7250  
Ph: (03) 6336 2511, Fax: (03) 6336 2567 Email: reception@eskwater.com.au Web: www.eskwater.com.au



File No: 3222

Your Ref:

26 July 2007

Mr B Cole  
Chair of Engineering Heritage Tasmania  
2 Davey Street  
**HOBART Tas 7000**

Dear Bruce

**LAUNCESTON WATER SUPPLY, 1857 – HISTORIC ENGINEERING  
MARKER**

I am writing to advise that we would be most pleased to allow an Historic Engineering Marker to be placed in Princes Square to commemorate 150 years of Launceston's water supply. We will need to submit a Development Application and receive planning approval prior to the installation. There will need to be some documentation prepared for the application. Please provide me with the specification of the marker so that we can finalise where exactly the marker is to be placed and how it is to be mounted.

We would also participate in a dedication ceremony on the commemorative date.

If you need to discuss this matter further, please do not hesitate to call me on 6323 3612 during normal office hours.

Yours sincerely

A handwritten signature in black ink, appearing to read "Andrew Smith".

**Andrew Smith**  
**MANAGER PARKS & RECREATION**

Town Hall St John Street  
Launceston Tasmania 7250  
P O Box 396 Launceston Ausdoc DX 70127  
T 03 6323 3000 TTY 03 6323 3003 F 03 6323 3001  
Email: council@launceston.tas.gov.au

**LAUNCESTON CITY COUNCIL**

## ATTACHMENT C

## PHOTOGRAPHS



**Photo 1: Replacement flume with the remnants of the original on the left**



**Photo 2: The tunnel adit**





**Photo 3: The original Distillery Creek Dam  
above Waverley**



**Photo 4: The French fountain in Prince's  
Square, erected in 1858**

**ATTACHMENT D****DRAWINGS**

Number 434. Launceston Waterworks Plan Showing Distillery Creek & St Patricks River

Number 464, LMC, Waterworks Dep't, Plan & Section of Race & Tunnel

Water Trunk Mains and Reservoirs in the late 1850's

Water Trunk Mains & Reservoirs (2007)

456

434

See 405  
73  
457  
433

Launceston Waterworks —  
Barstewing Distillery Ck. & St Patrick's River —

*Chas. B. B. B.*













